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Open-World Art: searching for customisation of artistic experiences in the boundaries between videogames and media art

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ENG **Abstract:** Current trends in audiovisual contents look at customising the user experience by adapting media to consumers' choices and preferences. Immersive media art has absorbed some of the elements of 'engagement', but it does not seem to have reached the level of individualisation of experience that digital games have achieved. To define the difference between open-world games and immersive performing art, an analysis of immersive artworks is performed based on Calleja's Player Involvement Model. As a result, the concept of open-world art is proposed to connect open-world game features and immersive art, to build a novel artistic construction that creates actual personal experiences for participants.
Keywords: Open-World Games, Immersive Art, Videogames, Media Art, Performing Arts.

ES Arte de mundo abierto: en busca de la personalización de experiencias artísticas en los límites entre los videojuegos y el arte multimedia.

Resumen: Las tendencias actuales en los contenidos audiovisuales están mirando hacia la personalización de la experiencia del usuario adaptando los medios a las elecciones y preferencias de los consumidores. El arte inmersivo en medios digitales ha absorbido algunos de los elementos y el espíritu del 'engagement', pero no parece haber alcanzado el nivel de individualización de la experiencia que han logrado los videojuegos digitales. Para definir la diferencia entre los juegos de mundo abierto y el arte escénico inmersivo, se realiza un análisis de obras inmersivas basado en el 'Player Involvement Model' de Calleja. Como resultado, se propone el concepto de arte de mundo abierto para conectar las características de los juegos de mundo abierto con el arte inmersivo y para desplegar una nueva construcción artística que genere experiencias personales auténticas para los participantes.
Palabras clave: Videojuegos de mundo abierto, Arte inmersivo, Videojuegos, Arte audiovisual, Artes escénicas.

Summary: 1. Contextualisation. 1.1. Video games. 1.2. Open-World Games. 1.3. The metaverse as a new communicative strategy. 1.4. A direct influence: The Museographic experiences. 1.5. The use of AI as a tool to create immersive experiences. 2. Hypothesis. 2.1. Objectives. 2.2. Methodology. 3. Micro-involvement: similarities between videogames and immersive art. 4. Discussion. 5. Conclusions. 6. References.

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1. Contextualisation

Immersion in virtual worlds has been supported by technology since the invention of the stereoscope in 19th century. The current development of interactive Virtual Reality (VR) technology has renewed the discussion about immersion. The concept is an object interdisciplinary study, encompassing the fields of several disciplines, including audiovisual communication, psychology, and arts. As an interdisciplinary reconciliation, Murray proposes that immersion "is a metaphorical term derived from physical experience of being submerged in water. [...] the sensation of being surrounded by a whole reality, as different as water is to air, which takes our attention, our whole perceptual apparatus" (Murray, 2017: 99). This definition brings a psychological view of the concept, explaining that immersion is a state produced by the mental involvement that needs an activity to be performed (Lombard et al., 2009). Arriving to that state can be achieved by three reasons: sensation of being surrounded, absorption produced by a narrative, and absorption as a result of the performance of an activity (Agrawal & Bech, 2023: 322).

Immersive phenomena depend on subjective perception, although a subject might not be conscious of its immersive experience (de Vasconcelos, 2021: 1). The point of view of artistic immersion deepens into the idea of causing a bidirectional communicative process between artwork and viewer, a perceptual relationship based on principles of space and body (Liu et al., 2022). Immersive media art builds a specific space, a multisensory stimulus in which our body gets fitted into an ecosystem, that is assembled from our inability to distinct between knowable experiences of illusion and reality (Maturana, 2008). This illusion of immersive events is considered as a self-perceptual construct similar to Merleau-Ponty's reversibility: the own subject can identify itself in a virtual world as it does in real world (de Vasconcelos, 2021; Merleau-Ponty, 1968; Smith, 2005). This concept emerged in a context where conceptual art was already a well-established reality in Western artistic creation, at a time when Kaprow was exploring new scenarios and experiences for viewers through the happening. As a result, immersive involvement is possible due to the cognitive adaptability of the viewer, who constructs an entirely new environment through subjective perception –a new *Lebenswelt* (Husserl, 1936; Trentini, 2015)– created by the illusion generated by user's cognitive structures (Jaume Pérez, 2021).

Thus, immersive art entails the need to see oneself in the new world and to understand one's situation in a virtual society, just as in the real one, where the notions of time, present and future are transformed. The way we perceive others, ourselves, and naturally everything we think is possible in the future, becomes an exercise of imagination –which has always characterized creativity, by the way– in these works that build environments and spaces inhabited in an original way and fictions based on a human consciousness freer of spatiotemporal parameters. In this sense, they would be anticipation stories (Despret, 2021) or speculative fictions (Haraway, 2019), on which Caplliure (2023) reflects. Immersive art represents a change in our perception and the experiential capacities of the human being, transforming the concept of point of view, narration, gaze, and even interface and others related to senses or feelings such as empathy (Martínez-Cano & Roselló-Tormo, 2021) which opens these works to political potentialities.

Immersive principles were born from psychological theories like Czikszentmihalyi's 'Flow Theory', allowing the definition of immersion to be held up by audience engagement caused by its

involvement in activities (Li & Huang, 2023). This theory focuses on interaction, presenting a conceptual perspective of immersion connected to immersive model of videogames. From this theorical proposal, the term of cognitive absorption arises, defined as "a state of deep involvement with software" (Agrawal & Karahanna, 2000: 665). Cognitive absorption brings up the redefinition of some topics like user's experience or user's confidence from a social and psychological point of view (Balakrishnan & Dwivedi, 2021). Open-world games are the most representative examples of this principles. They build up optimal interfaces to achieve cognitive absorption due to user's autonomy, wide virtual environments, and a large variety of challenges and tasks that lead users to engage find out a whole fun experience (Zhao et al., 2024). While Csikszentmihalyi (2008) sets a theorical fundamental for immersion, 60s digital art represents the artistic background for current immersive art. The interest of dadaist artists in their contemporary technology developments opened a door for visual arts to assimilate the newest advances, then and now (Marí-Altozano & Sedeño-Valdellós, 2024). With regard to technology, the deep research in human-machine interaction began with Brian Shackel's article 'Ergonomics for a computer' in 1959. Interactivity was assimilated by art within the next decades, especially since 'Algorithm Art' exhibition in 1968 and further with Rokeby's art installations (Rokeby, 2010).

1.1. Video games

Immersion is often used as a synonym for engagement, though they are not exactly the same. According to Czikszentmihalyi's theory, immersion may require interaction to fully absorb the user into the content or game. However, true immersion appears to evoke something deeper in the user than mere attraction to an activity. Some researchers and studies distinguish this difference by emphasizing the presence of a new fictional world –a new reality that fully encompasses the user's visual and auditory perception through VR and metaverses (Hernández, 2006; Li & Huang, 2023).

Although interactivity is not synonymous with immersion, the rise and consolidation of video games in the modern audiovisual market have significantly transformed how consumers interact with, engage with, and understand content. Video games rely on audiovisual texts that require an interactive narrative to transform the player into either a spectator or the main character of the story (Martín-Prada, 2022: 182), achieving different levels of presence within the game. Immersion and presence largely depend on game technology. In this regard, Alison McMahan (2003) developed a framework categorizing video games based on the type of immersion they offer. She distinguishes between flat video games and isometric systems, explaining that the former primarily refers to 2D games, while the latter encompasses 3D games or environments that allow players to change their point of view.

The concept of immersion has been increasingly integrated into digital games over the past decade. Meta and Sony have fully invested in VR, developing their own VR devices –the Meta Quest series and PlayStation VR. These VR games primarily expand on traditional digital game formats, particularly FPS (First-Person Shooter) and RPGs. In this field, certain video games have provided a viable and profitable avenue for developers, as seen with *Half-Life: Alyx* by Valve Corporation. These VR games grant players a limited degree of autonomy to move around. However, their geographical scale and the level of freedom they offer are not substantial enough to classify them as true VR open-world games.

1.2. Open-World Games

Open-world games create unique and personal playful experiences, as opposed to lineal and structured 'gameplay' of other formats like role-playing games RPGs (Alexander & Martens, 2017), which build a universe of options for the player: "With a large world and many options, players often feel lost and unsure of where to go" (Sullivan et al., 2012). This feeling of loss is, nevertheless, part of the process that open-world proposes, due to the use of large worlds in 'gameplays'. Thus, players focus on exploration and discovery rather than on lineal narratives predefined by the digital game (Szymanezyk et al., 2011).

Open-world games are based on the idea that players "do what they want when they want" (Hughes & Cairns, 2021: 3), at least as far as current technology allows, through various strategies. As a result, open-world games achieve a personalisation of the user's interaction with the game, which is consciously experienced by players: "Indeed, even finding two players that have played through the exact same content would be challenging" (Hughes & Cairns, 2021: 3). Thus, each player has a unique experience, something that does not happen in the rest of videogames formats.

The open-world format builds a 'magic circle', a non-real place in which the player undergoes a fictional experience that can be similar or not to real interactions, environments, or events (Juul, 2005). Accordingly, this genre crafts a narrative that integrates not only enjoyable and interactive features, but also geographic structures, making exploration and discovery crucial aspects of the consumer's experience. (Fraile-Jurado, 2023). Consequently, the geographic component causes an immersion: users get submerged in a fictional world, a virtual reality.

From this idea of immersion, Calleja develops the 'Player Involvement Model', earlier termed the Digital Game Experience Model, structured on six axes of involvements: affective, spatial, ludic, kinesthetic, narrative and shared (Calleja, 2007, 2011). Besides, this model is structured around two tiers of involvement: 'micro' and 'macro'. Micro-involvement in gaming refers to the "moment-by-moment engagement with gameplay" (Calleja, 2011: 40). This includes the immediate actions, decisions, and interactions that players make during their gaming experiences. Essentially, it focuses on the small-scale, in-game activities that contribute to the overall gaming experience. For example, when a player reacts quickly to an opponent's move in a FPS game or makes real-time decisions during a racing game, these actions represent micro-involvement. In contrast, macro-involvement refers to the long-term, off-line engagement with videogames (Calleja, 2011: 39). It includes broader aspects such as motivations, sustained interest, and overall commitment to gaming beyond individual play sessions. Macro-involvement considers the player's relationship with games over time, including factors like game preferences, social interactions related to gaming, and the player's identity as a gamer (Iacovides et al., 2014). This model emerged as a result of the evolution of digital games during the last decade of the 20th century. Since then, the study of video games has spread throughout the field of social communication research from the beginning of the 21st century.

1.3. The metaverse as a new communicative strategy

The rise of AI and Virtual Reality is introducing new ways of understanding both interpersonal and intrapersonal communication. In these contexts, VR art appears to function as a form of speculative narrative, expanding the boundaries of what is possible in visual and performing arts –much like cyborgs did decades ago (Haraway, 1999). As a concept, speculative narrative has been widely explored through in relation to science fiction, according to Haraway's perspectives. Fabrizio Terranova proposes a more concise definition of it:

A type of narration that enables one to unfold new worlds through arousing an appetite for what's possible (what could or could have taken place). It is not just about understanding a totally new creation, the remarkable difference is that it is about placing lures susceptible of bringing forth today possibilities that were already in situations. Enlarging the spectrum, the relationship to History, to stories, inventing sensitive ways re-unfolding in order to re-play and see what we sidelined, a whole series of possibilities that are still active today, to transform things. Enlarging the spectrum, including forms of science fiction (...). Multiplying types of approaches and possible narrative models. Creating characters, myths, inventing new situations to intensify this world[1].

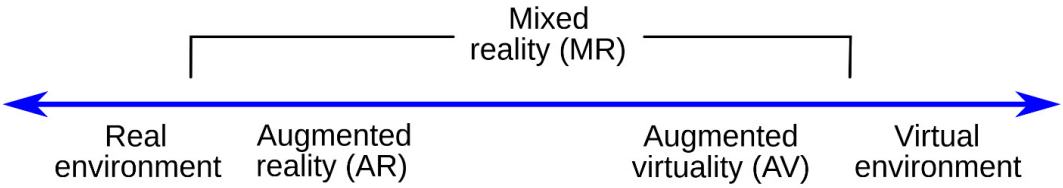
These new cosmologies represent not only an ideal or utopian fiction but a complete universe with its own physics, environments, and rules –commonly known as the metaverse. The metaverse is "an envisioned future Internet enabling immersive and real-time experiences of virtual reflection

[1] https://fabbula.com/speculative-fabulation-word/

for the physical world" (Khalid et al., 2023: 26). It opens new possibilities for interpersonal relationships through potential semantic communication, though user security must play a crucial role (Khalid et al., 2023).

In this regard, the cosmological features of metaverse represent the main characteristic of virtual worlds: an entire environment separated from the real world, with its own physics and behaviour, conceived as a parallel reality. The virtual world –also known as virtual environments– is spotted at the top of virtuality, at the maximum expression of VR. Consequently, the Reality-Virtuality Continuum places every type of VR according to the level of connection between reality and metaverse (fig. 1). On this point, the term virtuality is meant is to be a term that refers to a partial or complete immersion in a "synthetic world, which may or may not mimic the properties of a real-world environment, either existing or fictional" (Milgram et al., 1995, p. 283). Thus, virtuality can be explored as a fully virtual environment or "with some amount of 'reality" (Milgram et al., 1995, p. 285).

Figure 1. Reality-Virtuality Continuum (Chen, 2023, p. 22)



1.4. A direct influence: The Museographic experiences

It is evident that Virtual Reality has introduced new perspectives and considerations in the fields of art and communication, destabilizing traditional boundaries and foundations in both domains. It has also transformed the way artistic products and performances are consumed. In this regard, museums have found a new environment –a digital universe– to showcase their collections and promote visual arts to new target audiences. VR museums are now a readily accessible reality. For instance, the video game platform Steam offers users a free VR museum experience through *The VR Museum of Fine Art*, developed by Finn Sinclair. This application presents a large virtual space where users can move freely and admire paintings and sculptures, much like in an open-world game. However, it lacks a structured narrative or objectives guiding the user's journey.

Similarly, Meta has developed a museographic metaverse in *VR Museum: Art Through Time* for its HMD devices. However, these VR experiences compile famous artworks from different periods within a fictional space rather than replicating a real museum or gallery. The Smithsonian American Art Museum has also embraced VR technology to promote its collection. Through the VR application *Smithsonian American Art Museum: Beyond the Walls*, users can explore a virtual representation of the museum's east wing and additional fictional environments. This initiative highlights the potential of VR to promote and popularize museums as part of a new advertising strategy driven by the metaverse and immersive experiences. These museographic environments blend mixed and virtual realities, offering an innovative ecosystem for engaging with visual arts (Martí Testón, 2018).

1.5. The use of AI as a tool to create immersive experiences

Furthermore, contemporary art metaverses are integrating new AI-driven techniques and developments that are transforming the design and customization of communication strategies. The introduction of Large Language Models into artistic creation introduces new perspectives and creative processes that were not traditionally considered. In this context, the platform *Theatre of Tomorrow* is experimenting with the use of ChatGPT to replace real actors in VR theater, utilizing a pre-trained generative AI that responds to users based on predefined instructions (Wu, 2022). This type of perspective is changing and overpassing traditional interpersonal communications to

be substituted by an AI-human communication, integrating AI in artistic creation in a technological perspective, in a posthumanist perspective (Xu et al., 2024).

Moreover, the design of metaverses receives a considerable support from AI, especially for programmers and video game designers. The market of 3D modelling has suffered from the proliferation of generative AIs that allow the designers to obtain models from an image or a text, such as Meshy AI, Promethean or Polycam. These applications are facilitating the work of this designers and allowing non-expertise designers to manage VR projects and the construction of metaverses with a significative quality of design. This generative AI for 3D models represents the logical evolution of the Generative Adversial Networks (GAN) that are currently consolidated for images generation, a new habit in art creation that has led to the birth of a new style called 'GAN Art'. Beyond 3D modeling, AI-driven technology is increasingly being used to generate videos and 360º images, further simplifying the work of VR designers. Some tools, such as RICOH360 Tours and Toolify AI, are available to consumers and programmers via their websites. The company REM Experience has explored this type of generative AI in the *Painting* project, which converts some of the most important paintings in art history into 360º videos and 3D worlds (Agrup Lab, 2013). In this context, we will now identify the hypothesis underlying the concept of open-world art and outline a methodology for applying the term to some of the most important VR artworks of recent years.

2. Hypothesis

Immersion in open-world games lets players have a unique and personal experience, not only from a narrative and entertainment perspective, but also fundamentally sensory; the player deepens into a state of 'flow' which is perceptually distinct from that of other viewers, even though the audiovisual content –the open-world– in which they are submerged is the same. Current immersive performing artworks create spatial metaverses that brings visitors to a virtual world, situating their bodies as immersed objects, each of them becoming the centre of the experience. However, individualisation relies on the personal perception of the experience; the sensory aspect is shared by all participants, maintaining a general subjectivity in line with Kant's aesthetic. Therefore, open-world concept emerges as a real possibility to build personal narratives based on distinct sensory and cognitive experiences. Open-world art offers a potential for actual personal involvements, not only in perceptual terms but also sensory, providing different viewpoints of the same audiovisual content due to the user's autonomy. This constitutes 'open-world art', as an evolution of Wagner's total art: from *Gesamtkunstwerk* to a *Gesamtkunstwelt*, raising the art to the consideration of world, a reality of total art.

2.1. Objectives

To define potential possibilities of open-world art and its development, the following objectives are proposed:

- Identify open-world games features in current immersive audiovisual artworks.
- Analyse some of the most important immersive artworks to define creative patterns and models connected to open-world concept.
- Formulate a potential evolutionary pathway from immersive works resembling open-world virtuality to a prototype of open-world art.

2.2. Methodology

To achieve these objectives, we analyse immersive visual and performing artworks using Calleja's 'Player Involvement Model' (Calleja, 2011). This analysis helps us identify features shared between open-world games and immersive artistic creations. From the identification of the axes of micro-involvement, we signal connections between audiovisual content in both worlds, supported by theoretical and aesthetic elements, to construct an open, immersive, and personalized artistic proposal for the audience.

The selection of cases is based on three specific features that an artwork must possess to be considered, or come close to being considered, an open-world artwork:

- A fully immersive experience in which viewers have the autonomy to move around and explore. This is the most essential characteristic of open worlds.
- It must take place in a virtual environment. To be considered a 'world of art', the environment must be potentially manipulable by the artist. In this regard, VR artworks or installations similar to scape rooms can be examined.
- There must be interactivity between the artwork and the participant. This aligns with Czikszentmihalyi's concept of immersion, in which interactivity forms the basis of the 'state of flow'. This criterion excludes most scape rooms, visual installations and traditional artworks based on static and contemplative experiences.

According to this framework, the analysis will focus on three immersive artworks: *Tempest* by Tender Claws, *Le bal de Paris* by Blanca Li and *VR_I* by Gilles Jobin. First, we will identify Calleja's axes of involvement in museographic experiences and certain open-world video games as a preliminary step to analysing these artworks, with the aim of uncovering connections between those games and the artistic proposals.

3. Micro-involvement: similarities between videogames and immersive art

The main elements of Player Involvement Model describe an extrasensory line to define the level of immersion achieved by the videogame, based on the idea that participation fosters deeper immersion, leading to a heightened state of flow. Unlike traditional arts, videogames have been described as intrinsically rewarding, due to a combination of challenge, fantasy, curiosity and other interpersonal motivators, which fosters an open and active approach to 'gameplay' (Juul, 2005; Salen & Zimmerman, 2003); what Bernard Suits (1978) refers to as the "lusory attitude". However, the allure of art does not solely reside in its narrative or entertaining value, or at least, these aspects are not its primary objectives if the artwork aspires to be fully regarded as an artistic product from a traditional aesthetic perspective.

Historically, the motivation to engage with art has evolved from contemplation, arising from the aesthetic appeal inherent in the artwork, an attraction to be undergone aesthetically and to be the genesis of a knowable experience (Bourdieu, 2002). Interactive art has introduced a new perspective on contemplation, shifting from a passive to an active stance, from viewer to 'interactor', bringing 'engagement' into artistic narratives (Vázquez-Herrero & Pérez-Seijo, 2022). In this regard, immersive art incorporates elements of contemporary interactive communicative narratives pertaining to videogames. However, art goals remain rooted in classical aesthetic principles: the artwork becomes art when contemplated, even if the visitor is not merely observing but actively interacting with the piece of art.

The nature of art fosters an affective connection with the audience; it inevitably produces both affective and narrative involvement, often in a deeper emotional way that digital games do. As viewers, we are usually aware of this attraction, making us conscious of our engagement with the artwork. Conversely, open-world games create significant appeal through geography, which can be inspired by virtual or real environments (Fraile-Jurado, 2023). This dimension of spatial involvement is also seen in new museographic immersive scenarios, structured as 360° worlds, placing the consumer in a new geography (Martí Testón, 2018) –a space shared with other users, creating shared involvement. For instance, Tim Burton introduces viewers to a new world based on Alice's Wonderland in *Tim Burton's Labyrinth* (Burton, n.d.), using physical architectural models to submerge the viewer in a fictional space. While Tim Burton's creation focuses on 'analogical' scenography, other efforts, like Exhibition Hub and Layers of Reality, implement 360° immersion using 3D projections and videomapping (Gil, 2023; *IDEAL Centre d'arts Digitals*, 2019).

The spatial involvement in immersive museography builds an immersive perspective adapted to space; the construction of these exhibitions is based on architecture, an analog space where

audiences experience a new reality, a fictional world. In Virtual Reality (VR), as in open-world games, we also have to consider world scaling, geomorphology, and weather conditions (Fraile-Jurado, 2023). These elements are crucial in videogames like *Assassin's Creed Origins* and *Red Dead Redemption 2*, which not only build a geography, but also a historiography to immerse players in the past. In recent years, new immersive artworks have focused on constructing new geographic virtual scenarios; in fact, most of these works use game engines like Unity or Unreal Engine. For instance, the art and games studio 'Tender Claws' presents a world with its own virtual geography in 'Tempest' (Rodríguez, 2021). In this case, Head-Mounted Displays (HMD) are applied to submerge viewers in an adventure world based on virtual oceans, fields, and climatology, achieving significant spatial involvement that causes motivation and attraction.

Besides motivation, personal and situational engagement is one of the most important goals of computer games. This introduces the audience into a state of flow, disturbing its sense of time, and reaching the phase that Calleja calls "incorporation" (Calleja, 2011). The author focuses his model of analysis not on the direction that the videogame takes, but on the form of involvement prevalent during gameplay. For instance, shooter games mainly seek a ludic involvement from players. However, there are some games in which specific moments can develop different types of involvements. For example, *World of Warcraft* offers different phases, such as ludic involvement when pricing items at the auction house, and spatial involvement in the regional distinctness of worlds like Azeroth (Calleja, 2007).

Open-world digital games offer narrative structures based on the design of complex spatial elements and virtual environments (Rizopoulos et al., 2023). These environments are constructed upon real or fictional geographies which provide the video game with a narrative structure. However, this narrative is built by the user, whose presence in the gameplay defines the storyline's evolution within the digital game. Therefore, the narrative in open-world games depends mainly on user's choices about when and where to go (Hughes & Cairns, 2021). Nevertheless, digital games usually propose a principal storyline that is useful for player to avoid getting lost in the world. This is seen in *Red Dead Redemption 2* with the main story of Arthur and various secondary characters and situations that the player can choose to engage with or not, determining their kinesthetic and narrative involvement in the game.

Some current immersive artworks propose similar perspectives to the considerable user's autonomy of open-world digital games, although they do not reach the point where viewers are allowed to go wherever and whenever they desire. From a micro-involvement perspective, Blanca Li's artwork *Le bal de Paris* offers actual autonomy for participants to dance in a virtually transformed scenario (Li, 2020). Even so, the consumer still experiences from a kind of constraint in this immersive work: viewers are guided through the world and must follow a predefined trip. During that trip, they can dance completely 'ad libitum' with the rest of the viewers and NPCs, but only in a closed environment structured and delineated by physical space where their gestures are recognised digitally and performed virtually from other participants' points of view. Its engagement thus lies in a search for kinesthetic involvement, giving 'spatial' a secondary role as an environment that causes visual engagement and aesthetic pleasure. This results in a loss of autonomy about personal choices: they can decide how to dance and perform around the space, but not where in the world they do it.

Tender Claws' spectacle *Tempest* works in a similar way. Although performance involvem*ent* is hardly less important than in Blanca Li's work, '*Tempest*' builds a complete virtual world of adventures guided by a real actor, expressed as an 'avatar' (Gorman, 2020). In that world, the viewers live a phantasmagorical experience to bring Prospero to life. They must interact with some avatars controlled by other actors, making each performance different depending on actors and group of participants' decisions. During the experience, users can move around and interact using Oculus Quest joysticks. This feature allows them to explore the environment with a high level of autonomy (Adam Savage's Tested, 2020). However, this movement and exploration are designed to be performed while stationary; they do not require kinesthetic involvement or physical activity from the participant. Paying attention to Calleja's model, this theatre play would develop mainly narrative and shared involvement because of the existence of a specific goal to execute. Thus, the viewer

must plan and think about how to achieve it instead of focusing on a dance or a world to discover, and this directly connects the experience with Czikszentmihalyi's thoughts about immersion (Li and Huang, 2023).

Like *Le bal de Paris*, *VR_I* presents a complete virtual reality environment to viewers in real time. This environment invites participants to explore the world (Trilnick, 2017). Meanwhile, a group of dancers performs within the virtual world, represented by avatars that interact with the viewer during their exploration. The experience uses gesture recognition systems and HMD devices to create a fully shared experience[2]. This artwork offers participants genuine autonomy to explore and move around. However, they are confined to a small area due to the limitations of the recognition system –an issue shared with Le bal de Paris. Since it employs similar technology and immersive techniques, it demonstrates a strong sense of shared spatial and kinesthetic involvement. Participants can see their own bodies and those of others while moving within the confined space and interacting with fellow participants. As a result, other potential elements of engagement, such as playful or narrative involvement, take a secondary role. Their enjoyment is driven primarily by interaction with peers and exploration of the virtual world, although they cannot choose between different scenarios or make decisions as they can in Tempest.

This analysis discloses a strong resemblance between *Tempest* and certain multiplayer and open-world games, positioning the participant as the main character to make the audiovisual content flow. Although ludic involvement may be prevalent in the immersive structure of Tempest, interactions with actors and the interface provide instances of spatial, kinesthetic and narrative involvement. The use of VR as an interactive platform thus builds a complete experience, quite similar to open-world games. Meanwhile, *Le bal de Paris* and *VR_I* construct a utopian scenario for an open-world artwork. However, the use of gesture recognition technology limits participants' autonomy to a small area where they can move freely alongside others, creating an optimal environment for shared and kinesthetic involvement.

In summary, *Le bal de Paris* and *Tempest* represent performing artworks quite similar to open-world games due to their construction of entirely new virtual geographic worlds. Moreover, they provide audiovisual products with comparable levels and types of involvement in open-world games, engaging participants in artistic experience using motivations beyond affective and narrative topics, such as spatial or tactical involvements. In open-world games, consumers traverse the virtual world as they desire, selecting routs and destinations from a vast array of options, even leaving some of them unvisited (Hughes & Cairns, 2021). In contrast, these immersive performing artworks offer limited autonomy regarding the choice of locations to visit and stay; viewers are required to follow a predefined plan, although they can make decisions about specific aspects such as how to dance in Li's work or who to interact with in Tender Claws' (Li, 2020; Gorman, 2020). However, these decisions primarily influence how consumers react to the same experience rather than what they perceive sensorially. To gain a fully distinct perspective, it is necessary to let viewers to choose their own course, even if it means potentially missing out part of the content, as some open-world games cause.

4. Discussion

Immersive media art has adopted some aspects and the essence of 'engagement', creating entire virtual environments and interactive experiences to captivate audiences. Nevertheless, it seems to fall short of the level of personalisation found in digital games. A significant factor here is the absence of complete autonomy that characterises open-world and FPS games. To delineate the difference between open-world games and immersive performing art, an examination of immersive artworks is conducted using Calleja's Player Involvement Model (Calleja, 2011). Consequently, the term of open-world art is introduced to bridge the features of open-world games with immersive art.

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2 https://www.youtube.com/watch?v=AShm09chy6o

The concept of open-world art brings up some important topics and problems to face with. Although game engines are good options, the most complex problem is probably how to build the interface. An open world with an interaction like that of *Le bal de Paris* would require an enormous space and a large number of resources of gesture recognition and live rendering to be performed. On the other hand, *Tempest* proposes an interface potentially adaptable to open-world games format as it uses HMD for immersion and Oculus Rift hardware for movement within the world (Gorman, 2020). In this regard, volumetric recording seems to offer a sustainable tool to introduce real actors in virtual worlds, thereby enabling the virtualisation of characters from the real world to create a mixed reality environment (Martínez-Cano & Roselló Tormo, 2020; Martínez-Cano & Roselló-Tormo, 2021).

Other important topic is how the introduction of open-world format into art transforms the way the artistic narratives are built. Classical narratives in performing art are based on linear development of stories through space and time. However, contemporary artworks introduce temporal ellipses that break the natural line of the story. Open-world games shatter these classical and avant-garde narratives by granting the audience considerable dominance over the evolution of time and space. Thus, open-world art would need to offer multiple options for audience to view simultaneously, giving the viewer the chance to observe the space he desires. An example of it could be an opera in which many singers are performing in different rooms of the same building, rooms that the viewer could freely prospect. According to the analysis performed, the level of autonomy is the main point that makes a difference between immersive performing art and open-world games. If current immersive art can achieve a similar level of autonomy, it will provide a distinct experience to each participant, offering a personalised perspective on the same artwork.

The analysis reveals numerous similarities between digital games and contemporary immersive art. Calleja's model seamlessly applies to modern VR theatre and dance artworks, showcasing a complete "incorporation" of audience throughout their virtual journeys (Calleja, 2007, 2011). However, it is imperative for artworks to continue crafting experiences focused on generating aesthetic experiences, rather than mere entertainment, thus upholding their status as art. Moreover, the interaction of the audience prompts a new reflexion about creator-user relationship. The viewer acquires a dual role as both participant and author: a co-author. Open-world art introduces the notion of the co-author, that not only transforms the artwork, but also shaping the viewer's perception through embodied cognition (Trentini, 2015).

Nevertheless, open-world art faces the risk of devolving into mere entertainment, resembling digital games. Therefore, user's interactions in open-world art must retain some main elements of classic aesthetic to continue being considered as art, maintaining a distinction from videogames. One such element is that viewers' interactions must not cause significant change in the development of the artwork; in other words, the growth of its narrative cannot depend substantially on user's activities. This condition would transform the artwork into a kind of platform game where users must overcome levels to advance through its narrative. Additionally, user's interactions must not be rewarded, as this would impart a playful sense to the piece of art. Beyond its aesthetic dimension, open-world art also raises ethical concerns. As a potential shared environment, it can offer meaningful ways to interact with others and create new scenarios for globalization within aesthetic experiences. However, it also entails some of the most pressing ethical issues associated with the use of VR, such as fraudulent behavior, verbal abuse, and increased feelings of loneliness due to the absence of face-to-face interaction. In this context, a moderate use of open-world art activities involving VR is advisable. In summary, users' activities can allow them to travel freely through the virtual world and interact with some elements, but they must not cause significant disruptions in the flow of the artwork.

Furthermore, an optimal scenario for an open-world artwork would present significant technological and practical challenges. Not only would VR devices be required, but also an extremely large physical space to allow users to move around and explore different parts of the virtual world. For this reason, the use of joysticks and interactive tools may be considered, although these can reduce the sense of kinesthetic involvement. An alternative solution is the use of Mixed Reality, in

which the real world is modified using AR and spatial audio. This approach can be implemented on most HMD devices and allows users to move freely without physical limitations.

Moreover, the study of open-world art as a new artistic concept faces significant limitations, particularly due to the lack of effective control mechanisms for the experiences and the absence of a framework or specific model to analyse user experiences or to guide the creation of artworks that explore and research this concept. For this reason, we have turned to a model from the field of video games, an audiovisual media directly related to this type of artwork. As a result, future lines of this study will focus on designing artistic experiences that can be considered open-world art, according to the features outlined in the methodology, and on assessing whether viewers perceive and experience something akin to an open world using Calleja's model.

5. Conclusions

Calleja's Player Involvement Model has revealed a significant similarity between videogames and contemporary VR performing art. Its application demonstrates that artworks like *Le bal de Paris* and *Tempest* develop immersive experiences akin to those found in open-world games and multiplayer FPS games. These artistic proposals also allow the viewer to achieve deep levels of engagement through spatial, kinesthetic, narrative, and shared involvements.

Open-world games construct virtual worlds that can be freely explored and discovered. This achieves customisation of user's experience through free interaction with the game. By contrast, VR media art remains highly limited in terms of viewer's autonomy, allowing interaction with the content in a close range of actions and restricting the exploration. Consequently, a blend of open-world games and VR media art is necessary to create truly individualised artistic experiences for the audience, offering new motivation and attractive elements to engage users in performing arts. As a result, the concept of open-world art is defined as a construction based on current immersive media art and user autonomy in open-world digital games. Thus, artworks like *Le bal de Paris* and *Tempest* provide a solid foundation for the development of new artistic virtual worlds where the audience can explore without restrictions. Beyond performing arts, visual arts are leading the introduction of open worlds into user experiences through VR museums and environments that allow the consumer to explore freely a complete virtual gallery, a metaverse of arts.

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